Colorado Department
of Public Health
and Environment

SEP 18 2000

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Dear Stakeholder

We are writing to update you on the status of the Rocky Flats Cleanup Agreement Radioactive Soil Action Level (RSAL) review As you know, the RFCA parties initiated the annual review of the RFCA on June 30, 2000 This review includes an agency review of the interim RSALs At the time, we developed a scope of work (enclosed) as well as more detailed work plans for each item (enclosed)

There is a great deal of public interest in the RSAL discussion and it has been our hope to involve you in this review However, it has become evident that this approach has been ineffective We recognize that there is a need for a more formal set of discussions on the status of the RSAL review Therefore, we propose the following steps

1 Utilize the technical sessions prior to the RFCA Focus Group meetings to provide an update on the status of each of the tasks comprising the RSAL review (see enclosure)

2 Since much of the discussion surrounding the RSALs involve policy issues, we should use the RFCA Focus Group as the key arena to address these policy issues Accordingly, drafts and iterations of discreet pieces of the review will be presented at the RFCA Focus Group

3 Public meetings will be scheduled as needed, with at least one public meeting prior to the release of the draft review for public comment

4 We will schedule conference calls every other week for interested stakeholders and any interested members of the public to ask questions, get additional information, get clarifications, or raise issues or concerns These will fall in the weeks when we are not having RFCA Focus Group meetings or technical review sessions

5 We will continue to offer to any interested members of the public the opportunity to interact directly with the specific agency staff working a particular aspect of the review

Additionally, we believe it would be helpful for the RFCA parties to frame the specific issues we believe to be the critical issues facing the agencies and the community in the RSAL review Towards that end, we have described below the principal policy and technical issues facing the agencies as we conduct our review The agencies will continue to conduct a full review that will look at the full scope of issues described in the attached workplan But it is our informal judgement that the issues described below are the central issues to be explored, issues that could drive a significant change in RSALs

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Scenario Development Under the Comprehensive Environmental Response Compensation Liability Act (CERCLA) guidance, remedial action objectives, including cleanup levels, should reflect the reasonably anticipated future land use or use(s) CERCLA allows agencies to consider institutional controls as a factor in restricting future land use The 1996 agency RSALs examined scenarios consistent with RFCA anticipated land use related to a dose of 15 millirem, as well as scenarios consistent with failure of institutional controls related to a dose of 85 millirem The agencies selected as an RSAL the more conservative of the two values calculated for each scenario Some in the community have argued that the RSAL should be based on a scenario more protective than the anticipated future use of an open space user Since institutional controls and other measures to restrict land use are allowed under CERCLA, a policy discussion needs to be held to weigh the pros and cons of going beyond CERCLA guidance and RFCA to base an RSAL on an assumption of complete institutional control failure Only by going beyond CERCLA guidance and the RFCA could the RSAL be based on the scenario that would lead to the greatest possible exposure and ensure that this future user is protected Since there is broad agreement within the community on the future land use of the Site, the issue here boils down to whether a cleanup designed to protect a future user is adequate, or whether the Site should seek an RSAL designed to protect a future user other than the user associated with the reasonably anticipated land use A related policy question is how to define and develop a scenario associated with institutional control failure The agencies in 1996 selected a suburban residential scenario in accordance with then current EPA Guidance Some in the community have suggested different definitions of this scenario

Catastrophic Events The CERCLA and the Environmental Protection Agency (EPA) guidance call for agencies to address likely exposure in an average year, and thus do not require evaluation of rare catastrophic events such as floods, droughts or fires Some in the community have raised the issue that these events must be considered, given the long lasting nature of the contaminant, and that some events, such as prairie fires, may be more common than the agency RSALs in 1996 may have assumed

Air Resuspension: A key factor for developing RSALs is understanding how much plutonium in the soil potentially becomes suspended in the air and therefore becomes potentially breathable by a future user This is especially important at Rocky Flats since much of the plutonium is in surface soils and since there is so much wind activity at Rocky Flats Some commentators believe that the agency assumptions on air resuspension are not conservative enough This issue is strongly linked to the issue of catastrophic events since, for example, a prairie fire can reduce vegetation cover and thus potentially increase soil erosion from high winds

These three issues have been highlighted by the work of the Risk Assessment Corporation, by the review by Argonne National Laboratory and through numerous discussions among the agencies and stakeholders We recommend that community discussions at this point focus on these issues Some in the community have suggested that the public designate technical "peer reviewers" to interpret and analyze for the community some or all aspects of the RSAL review Any peer review should focus on these issues that we believe to be the principal issues that need to be resolved We need to further discuss how this will work, since some of these issues are

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technical issues such as air resuspension and some are policy issues such as scenario development It is important for the RFCA parties and the community to reach some consensus on what issues precisely we wish to peer review and what kind of peer reviewer would be competent to provide such a peer review

The RSALs are one component of the regulatory framework that drives cleanup In some parts of the Site – including the 903 pad – the need to protect on site surface water will likely require additional measures beyond the cleanup needed to meet the RSAL As important as RSALs are, they will not in all areas be the factor driving cleanup

We look forward to discussing this in greater detail at a future meeting of the RFCA Focus Group Until then, we urge anyone interested in working with us on the RSAL review to directly contact the key contacts on the enclosed memorandum Also, feel free to contact any of us

Thank you very much

Sincerely,

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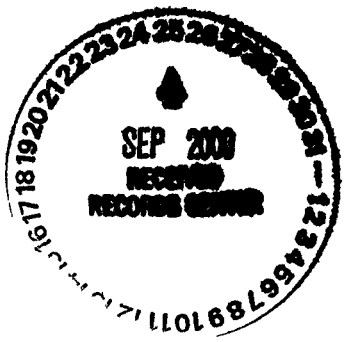
Enclosures



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Radionuclide Soil Action Levels
Work assignments for RFCA RSAL Review

RFCA Radionuclide Soil Action Level Staff Action Group

The Rocky Flats Cleanup Agreement (RFCA) Radionuclide Soil Action Level (RSAL) staff action group for the year 2000 will evaluate any new information available and determine its impact to the RSALs The action group is comprised of members from the Department of Energy (Rocky Flats Field Office, RFFO), Environmental Protection Agency (Region VIII), the Colorado Department of Public Health and Environment and the Kaiser-Hill Team To start this evaluation, the staff action group will revisit work completed in FY98 and FY99 to refresh everyone's understanding of past information and identify areas that need further research

In March 2000, RAC completed their contract of reviewing the RFCA RSALs The RSALOP submitted the findings in the RAC report recommending a change to the RSALs The staff action group needs to evaluate and incorporate any information relevant from this review and any other review conducted This will be accomplished in each of the Actions identified below

The RFCA RSAL review has two public meetings planned The first, in July 2000, will discuss the RFCA Annual Review that includes review of the RSALs The second meeting, planned for fall of 2000, will present the draft RFCA RSAL Review report The public will be offered sixty days to comment Comments will be considered for the final RFCA RSAL report

The following Actions will need to be completed by the staff action group The staff will work towards a mutual understanding of the issues and consensus to the path forward Upon completion of each action, the staff will prepare a report providing a recommendation to the RFCA Principals The report will identify areas that the group could not reach consensus and each RFCA party may have a different recommendation to their respective Principals

Action 1 Conduct a regulatory analysis

Suggested lead EPA
Support from DOE/KH and CDPHE

This action involves reviewing the dose-based (EPA, DOE, NRC, 15/85 mrem/yr v 25/100mrem/yr) approach versus a risk-based approach (CERCLA) The action group will review the EPA memo on radiation risk assessments (Directive 9200 4-31P), EPA guidance on probabilistic risk assessments, Federal Guidance Report No 13 (potential new risk coefficients), and the Colorado adoption of NRC rule into its Radiation regulations Determine whether an ALARA analysis is required and what minimum requirements are needed for the analyses

Action 2 Model Evaluation
Suggested lead DOE/KH
Support from EPA and CDPHE

The action group will re-evaluate models previously reviewed and clearly document the similarities and differences between the available computer models that could be used to calculate a radionuclide soil action level Examples of computer models that will be evaluated include the latest version of RAC modified RESRAD, RESRAD version 5 61 and probabilistic version (if available), DandD probabilistic The outcome from Action 2 will be a recommended model to use and whether a probabilistic or deterministic approach should be followed

Action 3 Parameter Evaluation
Suggested lead DOE/KH
Support from EPA and CDPHE

The action group will evaluate input parameters, including a comparison with RAC values, for the models evaluated in Action 2 The staff action group will decide whether/how a fire event (or other catastrophic event) should/could be incorporated into the model What are the implications of institutional control failure and how that should be incorporated in future RSALs What are plausible future land uses, and how conservative do they need to be If open space is still the reasonable foreseeable future land use, define specifically what uses are allowed (e g , percentage time hiking, biking, picnicking, etc) Review original open space uses as defined in 1996 RSAL calculation review 1998 RFCA Annual Review Report, RAC Task 3 Report, etc The action group will look at affects of different dose limits as dictated by Action 1 Document the similarities and differences between the available parameters

Action 4 New Scientific Information
Suggested lead DOE/KH
Support from EPA and CDPHE

The action group will evaluate new scientific information since FY98 and as it becomes available throughout the year For example, the controlled burn plot presented some information about resuspension of dust after a prairie fire In addition, the fire at Los Alamos should provide excellent data that needs to be studied Other data needs to be gathered concerning grassland fires and revegation times in the surrounding areas The outcome of this assessment may be new information that may impact the RSALs All new scientific information will be summarized, including how the new scientific information may impact the RSALs

Action 5 Cleanup Levels at Other Sites
Suggested lead CDPHE
Support from EPA and DOE/KH

This task involves a review of RSALs at other sites The action group will evaluate any information available on how RSALs levels were derived at other sites and develop an understanding on the differences and similarities between the derivation of the cleanup level compared to the derivation of the RSALs

During the 1998 RSAL Annual Review, the RFCA RWG identified two sites that had derived radionuclide cleanup standards for plutonium, americium, and/or uranium using the RESRAD computer code i e , the Nevada Test Site (Tonopah Test Range) and the State of Washington (for implementation at Hanford) Because both of these sites are using these values on an interim basis, the RWG agreed to continue reviewing periodically the radionuclide cleanup standards from the Nevada Test Site (Tonopah Test Range) and the State of Washington in order to understand how these values were derived and to determine if there is any information that may affect the RSALs

Action 6 Draft Report

Suggested lead CDPHE
Support from DOE/KH and EPA

DOE/KH will recalculate RSALs (if needed) and CDPHE will lead the action group through the RFCA public comment process and change to the RSALs

Action 7 Final Report

Lead RFCA Parties

A final report documenting each action will be produced upon completion of each task Following public comment and incorporation of relevant comments, the final report will be part of the RFCA Annual Review

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Radionuclide Soil Action Levels - DOE Rocky Flats
Workplan for Action 1: Conduct a Regulatory Analysis

Goals

1) upon review of the documents listed below on risk- and dose-based determinations and making a determination on the NRC rule, a recommendation would be made regarding the appropriate rule and/or dose or risk methodology for determining an RSAL

2) evaluate whether RSALS should be based on a deterministic or probabilistic risk assessment

Tasks

1) Review the Draft Comparison Table (Laura Brooks, Kaiser-Hill, 1999) re the NRC Requirement/Approach (dose-based) (recently adopted by Colorado) and CERCLA Requirement/Approach (risk-based), and the RSALS RFCA Requirement/Approach (1996) based on the now defunct EPA draft rule which tried to establish 15/85 as the basis

2) Review/determine applicability of OSWER Directive No 9200 4-18 - Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination (Aug 22,1997)

3) Review/determine applicability of OSWER Directive No 9200 4-23 - Clarification of the Role of Applicable, or Relevant and Appropriate Requirements in Establishing Preliminary Remediation Goals under CERCLA (Aug 22, 1997)

4) Review/determine applicability of OSWER Directive 9200 4-31P - Radiation Risk Assessment at CERCLA Sites Q&A (December, 1999)

5) Review/determine applicability of EPA guidance on probabilistic risk assessments - latest version of Risk Assessment Guidance (RAGS 3A Draft)

6) Review/determine applicability of Federal Guidance Report No 13 - Cancer Risk Coefficients for Environmental Exposure to Radionuclides - potential new risk coefficients

6/19/00, K Reed

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Radionuclide Soil Action Levels

Workplan for Action 2 Model Evaluation

1) Develop Conceptual Model for RFETS with surface soils and subsurface soils being the source of radioactive material in the environment Exposure Pathways will be assessed for exposure scenarios applicable to the RFCA as well as any other exposure scenarios required to meet regulatory requirements

2) Evaluate environmental transport and radiation dosimetry computer models that support the conceptual model

3) Develop criteria by which all environmental transport and radiation dosimetry computer models will be evaluated These criteria will include an evaluation of the extent of model validation and verification

4) Identify deterministic models

5) Identify Probabilistic models-Probabilistic RESRAD available July 2000, DandD available December 2000 This includes the RAC probabilistic model

6) Evaluate all environmental transport and radiation dosimetry computer models against criteria developed in Part 3

7) Recommend model

Radionuclide Soil Action Levels

Workplan for Action 3 Parameter Evaluation

1) Identify plausible future land uses and any regulatory driven land uses applicable to the RSALs Obtain RFCA principal approval to use these land uses to derive RSALs

2) Using model(s) chosen in Action 2, conduct sensitivity analysis of all parameters in the model using all applicable radionuclides Focus efforts on defining the most appropriate value(s) for the most sensitive parameters for RSAL derivation Develop range or probability distribution from literature/site sources for most sensitive parameters, if appropriate All available information, including RAC reports, will be reviewed for parameter definition

3) Evaluate how/whether a fire event should be incorporated into the model If a probabilistic model is chosen, investigate expanding distributions to include the affects of a fire

4) Run computer model

Radionuclide Soil Action Levels

Workplan for Action 4 New Scientific Information

1) Conduct literature search on fires in the front range area Evaluate types of fires that would be expected with their affects Evaluate the affect of fires on continued land use

2) Evaluate any information available from recent Los Alamos fires

3) Evaluate air resuspension model within the selected model(s) from Action 2 and within the RAC model

4) Evaluate wind tunnel study results from Site controlled burn

5) Evaluate Actinide Migration Evaluation (AME) studies

6) Incorporate new scientific information, as appropriate, into Action 3

Action 5 Cleanup Levels at Other Sites

CDPHE will coordinate the review of new information received from other sites on the establishment of radionuclide soil action levels Reviews will include information from the following

- Updates to RSALS from the Nevada Test Site (Tonopah Test Range)
- Updates to RSALS from the State of Washington for Hanford
- New information from Johnston Attol
- Information on the methodology used at Fernald and Oak Ridge
- The RSALOP Task 1 Report

Action 7 Draft Report

Although all the agencies will be assigned tasks in preparing a draft final report on the RSALS, CDPHE will coordinate comments and feedback of the Stakeholder Focus Group, from letters received by the agencies, and verbal feedback received from public meetings, and ensure that these comments are addressed in the final report

RFCA RSAL Review Point of Contacts

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